Fig. 1

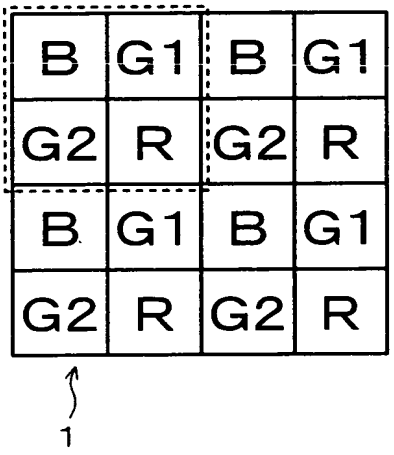


Fig. 2A

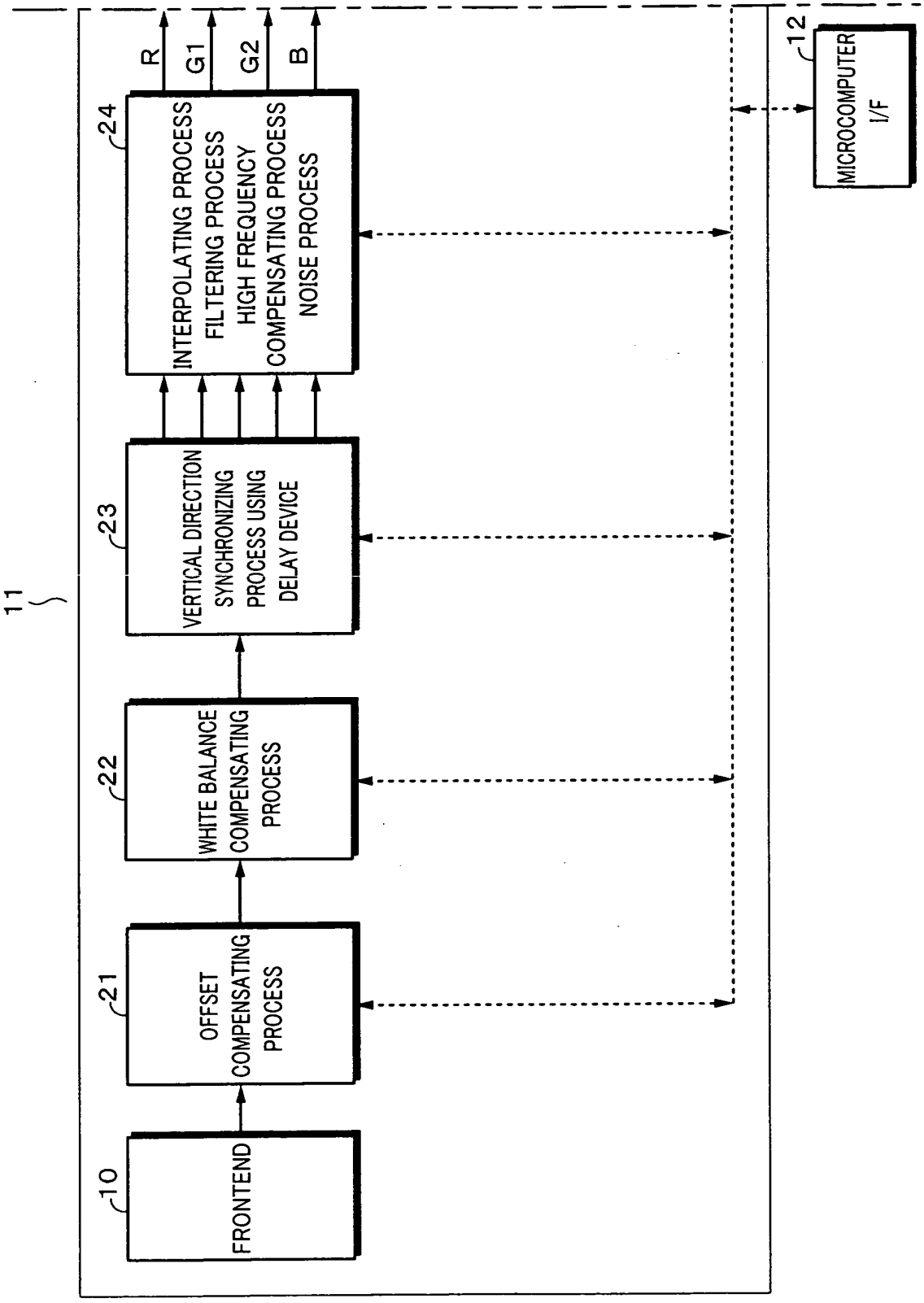

11
10
FRONTEND
21
OFFSET COMPENSATING PROCESS
22
WHITE BALANCE COMPENSATING PROCESS
23
VERTICAL DIRECTION SYNCHRONIZING PROCESS USING DELAY DEVICE
24
INTERPOLATING PROCESS
FILTERING PROCESS
HIGH FREQUENCY COMPENSATING PROCESS
NOISE PROCESS
R
G1
G2
B
12
MICROCOMPUTER I/F

Fig. 2B

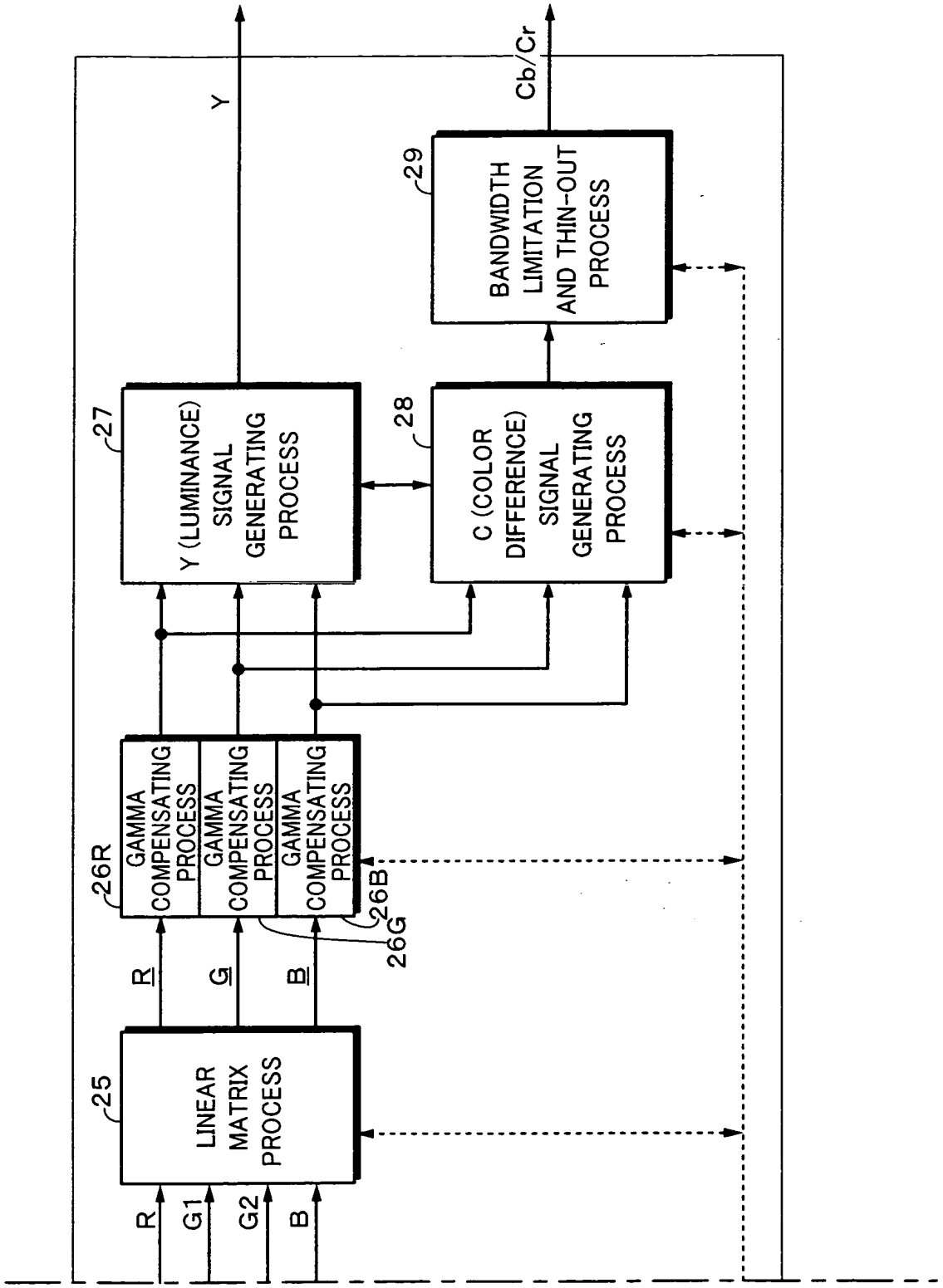

Y
Cb/Cr
29
BANDWIDTH LIMITATION AND THIN-OUT PROCESS
27
Y (LUMINANCE) SIGNAL GENERATING PROCESS
28
C (COLOR DIFFERENCE) SIGNAL GENERATING PROCESS
26R
GAMMA COMPENSATING PROCESS
GAMMA COMPENSATING PROCESS
GAMMA COMPENSATING PROCESS
26B
26G
R
G
B
25
LINEAR MATRIX PROCESS
R
G1
G2
B

Fig. 3

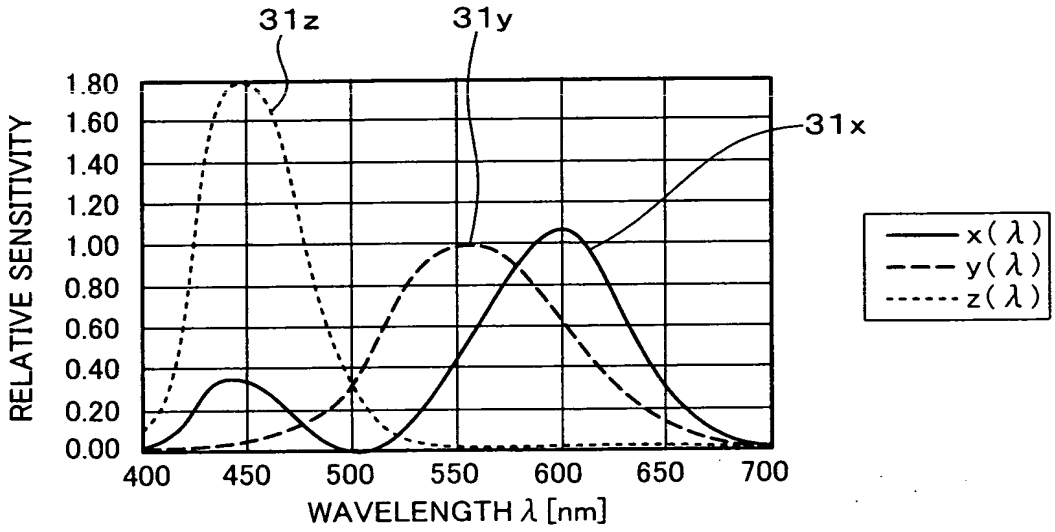

31z
31y
31x
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
RELATIVE SENSITIVITY
400
450
500
550
600
650
700
WAVELENGTH λ [nm]
x(λ)
y(λ)
z(λ)

Fig. 4

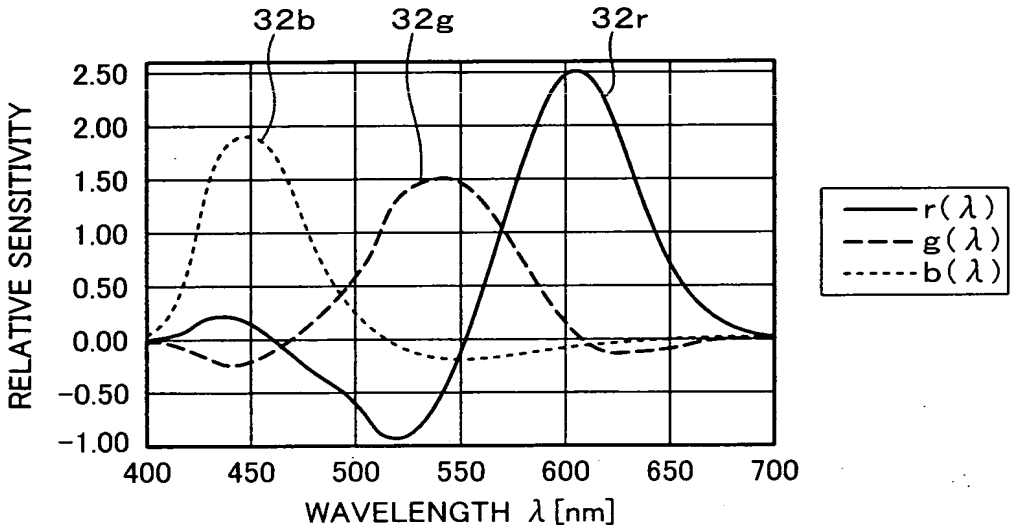

32b
32g
32r
2.50
2.00
1.50
1.00
0.50
0.00
−0.50
−1.00
RELATIVE SENSITIVITY
400
450
500
550
600
650
700
WAVELENGTH λ [nm]
r(λ)
g(λ)
b(λ)

Fig. 5

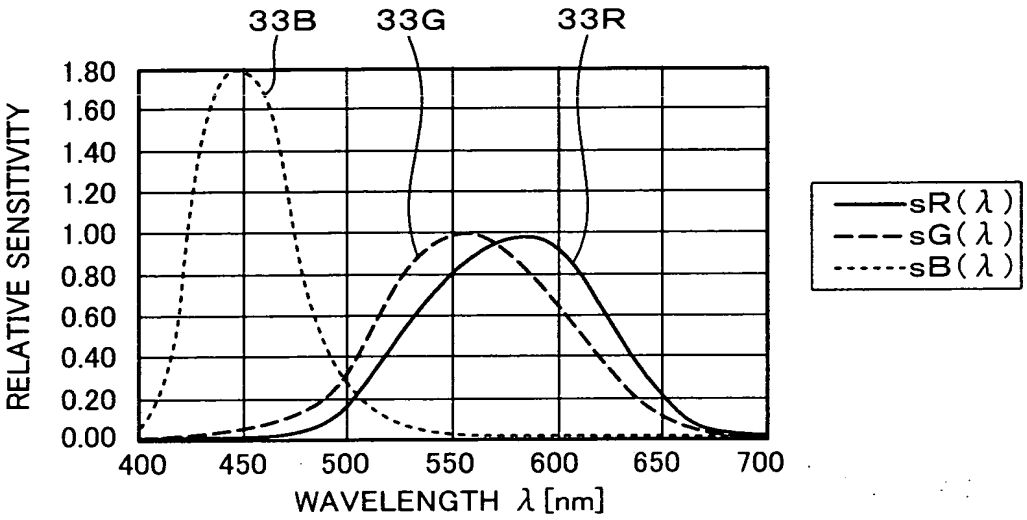

33B
33G
33R
RELATIVE SENSITIVITY
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
400
450
500
550
600
650
700
WAVELENGTH λ [nm]
sR(λ)
sG(λ)
sB(λ)

Fig. 6

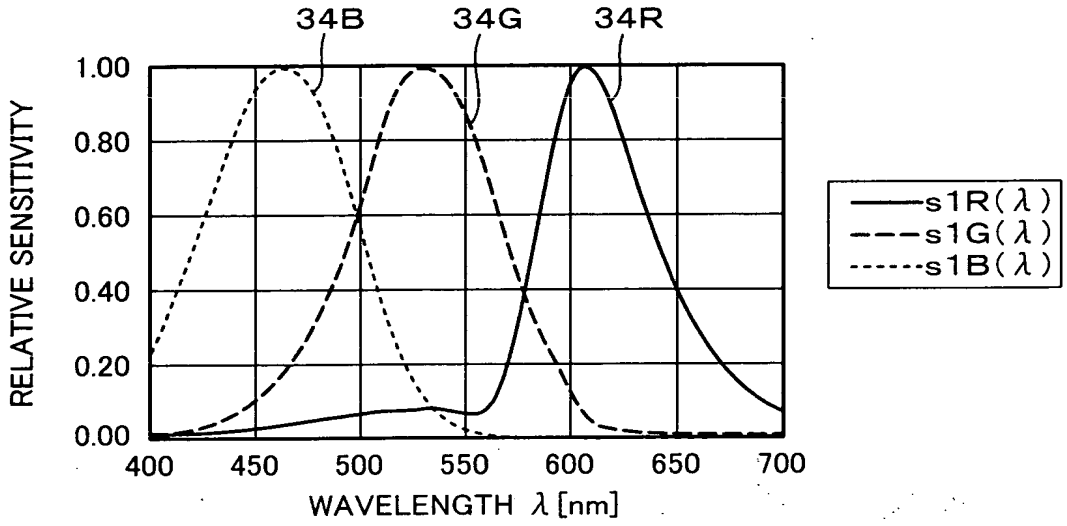

34B
34G
34R
1.00
0.80
0.60
0.40
0.20
0.00
RELATIVE SENSITIVITY
400
450
500
550
600
650
700
WAVELENGTH λ [nm]
s1R(λ)
s1G(λ)
s1B(λ)

Fig. 7

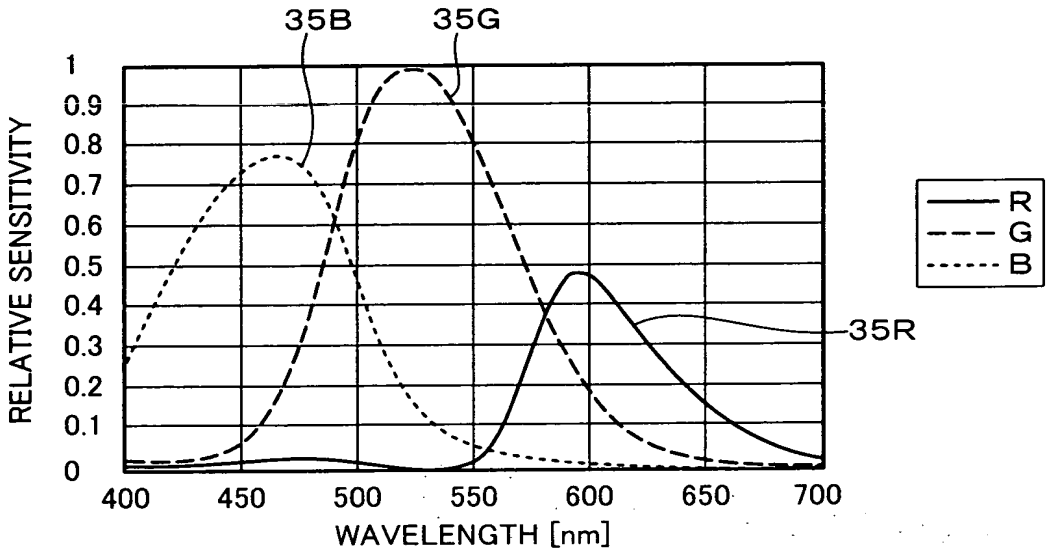

35B
35G
35R
RELATIVE SENSITIVITY
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
400
450
500
550
600
650
700
WAVELENGTH [nm]
R
G
B

Fig. 8

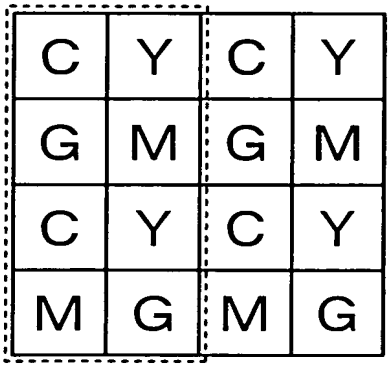


Fig. 9

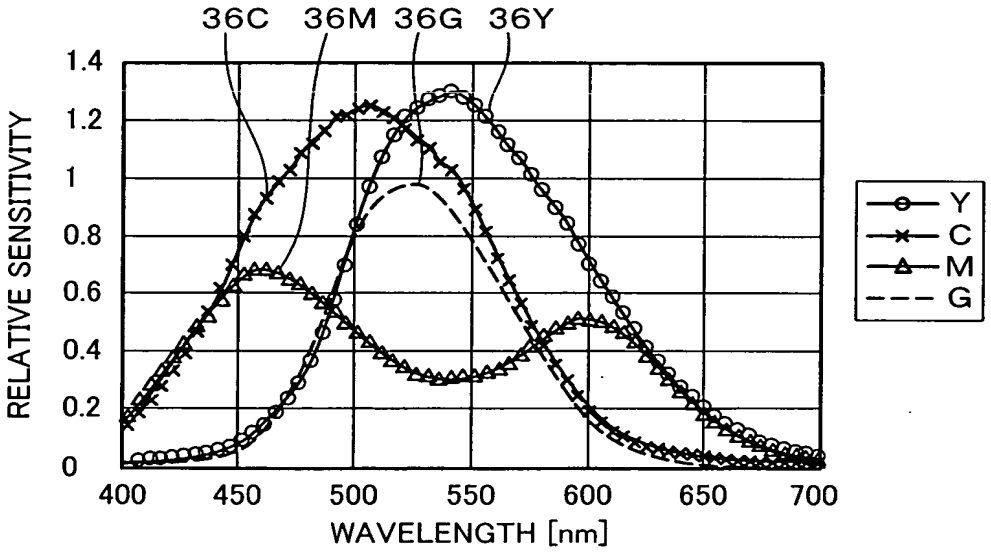

36C
36M
36G
36Y
RELATIVE SENSITIVITY
1.4
1.2
1
0.8
0.6
0.4
0.2
0
400
450
500
550
600
650
700
WAVELENGTH [nm]
Y
C
M
G

Fig. 10A

G	R	G	B
C	G	Y	G
G	B	G	R
Y	G	C	G

Fig. 10B

G	R	G	C
B	G	Y	G
G	C	G	R
Y	G	B	G

Fig. 11

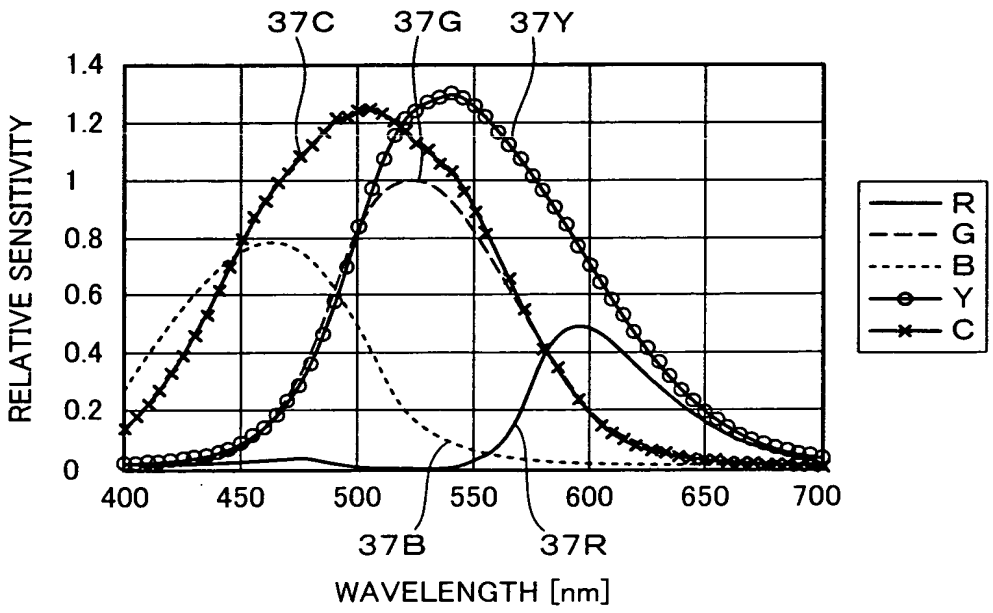

37C
37G
37Y
1.4
1.2
1
0.8
0.6
0.4
0.2
0
RELATIVE SENSITIVITY
400
450
500
550
600
650
700
37B
37R
WAVELENGTH [nm]
R
G
B
Y
C

Fig. 12

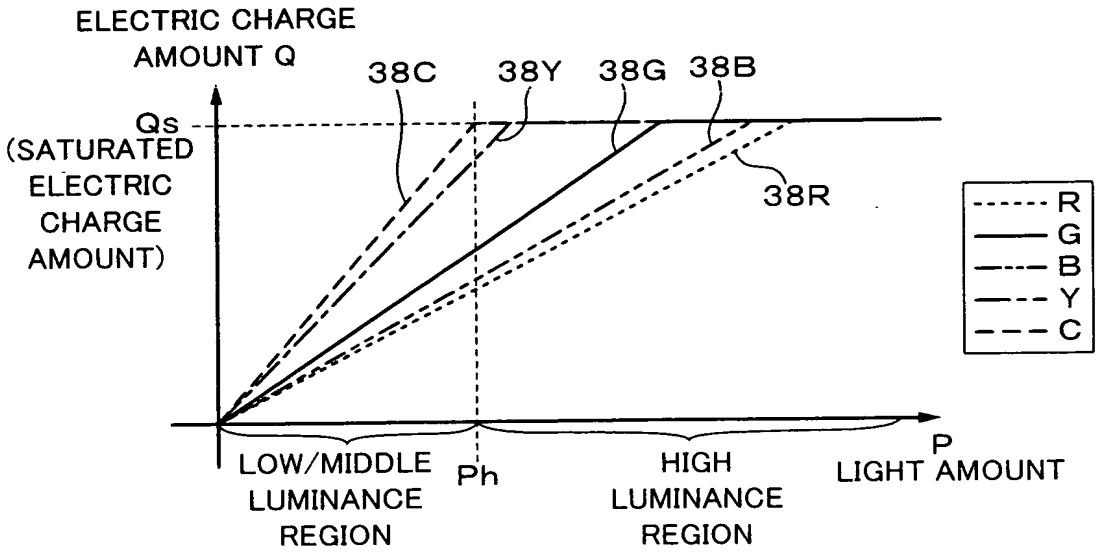

ELECTRIC CHARGE AMOUNT Q
38C
38Y
38G
38B
38R
Qs
(SATURATED ELECTRIC CHARGE AMOUNT)
R
G
B
Y
C
P
LIGHT AMOUNT
LOW/MIDDLE LUMINANCE REGION
Ph
HIGH LUMINANCE REGION

Fig. 13

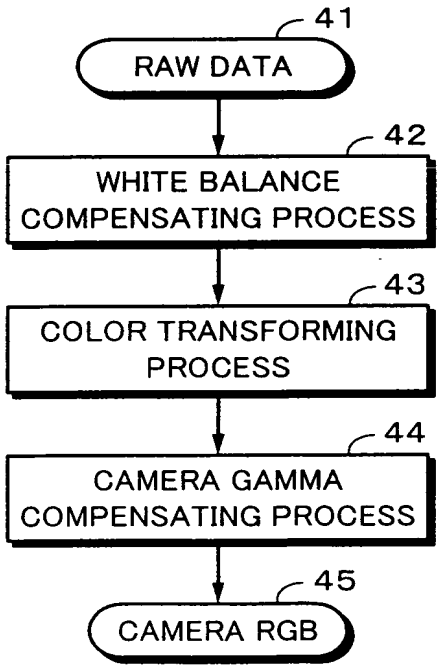

41
RAW DATA
42
WHITE BALANCE COMPENSATING PROCESS
43
COLOR TRANSFORMING PROCESS
44
CAMERA GAMMA COMPENSATING PROCESS
45
CAMERA RGB

Fig. 14

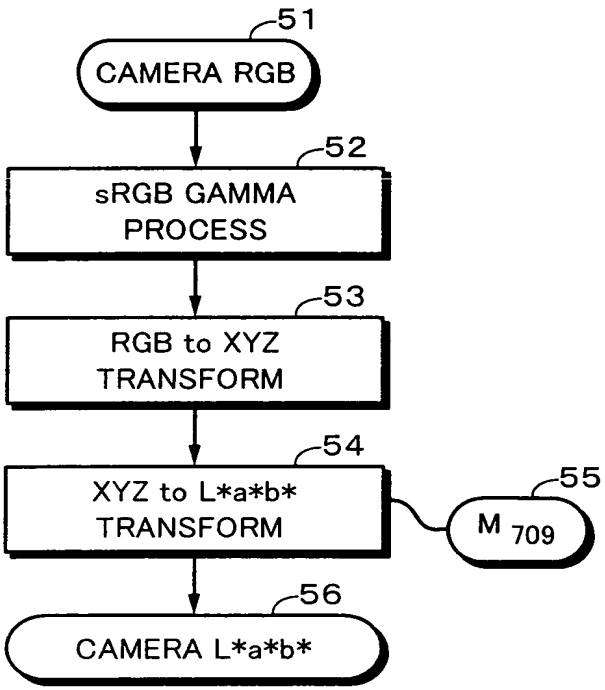

51
CAMERA RGB
52
sRGB GAMMA PROCESS
53
RGB to XYZ TRANSFORM
54
XYZ to L*a*b* TRANSFORM
55
M 709
56
CAMERA L*a*b*

Fig. 15

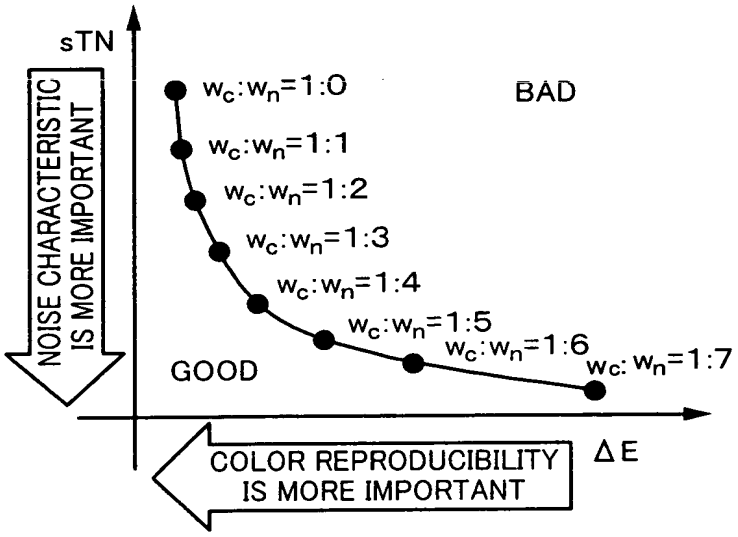

sTN
NOISE CHARACTERISTIC IS MORE IMPORTANT
$w_c:w_n$=1:0
BAD
$w_c:w_n$=1:1
$w_c:w_n$=1:2
$w_c:w_n$=1:3
$w_c:w_n$=1:4
$w_c:w_n$=1:5
$w_c:w_n$=1:6
$w_c:w_n$=1:7
GOOD
ΔE
COLOR REPRODUCIBILITY IS MORE IMPORTANT

Fig. 16

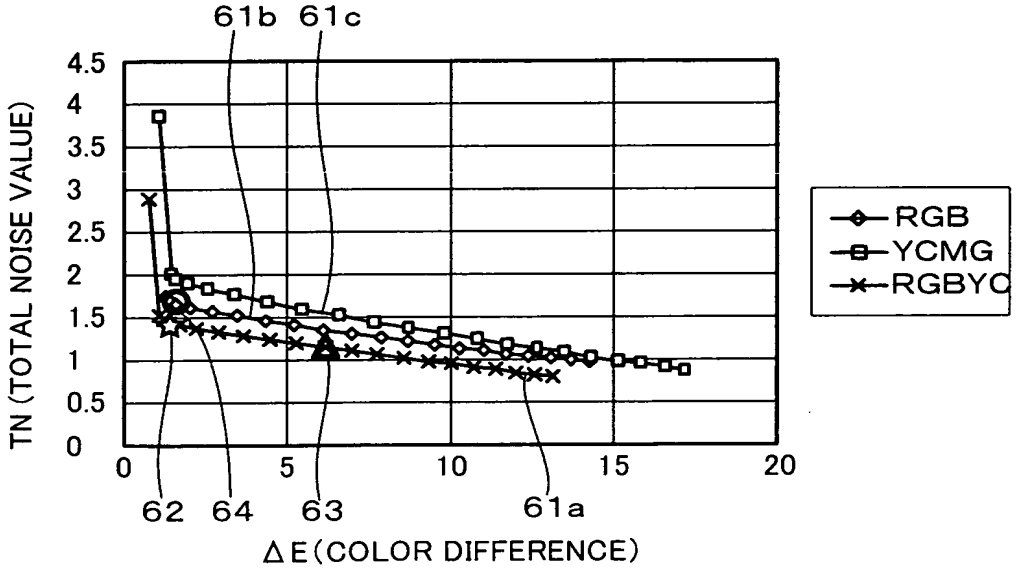

61b
61c
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
TN (TOTAL NOISE VALUE)
0
5
10
15
20
62
64
63
61a
ΔE(COLOR DIFFERENCE)
RGB
YCMG
RGBYC

Fig. 17

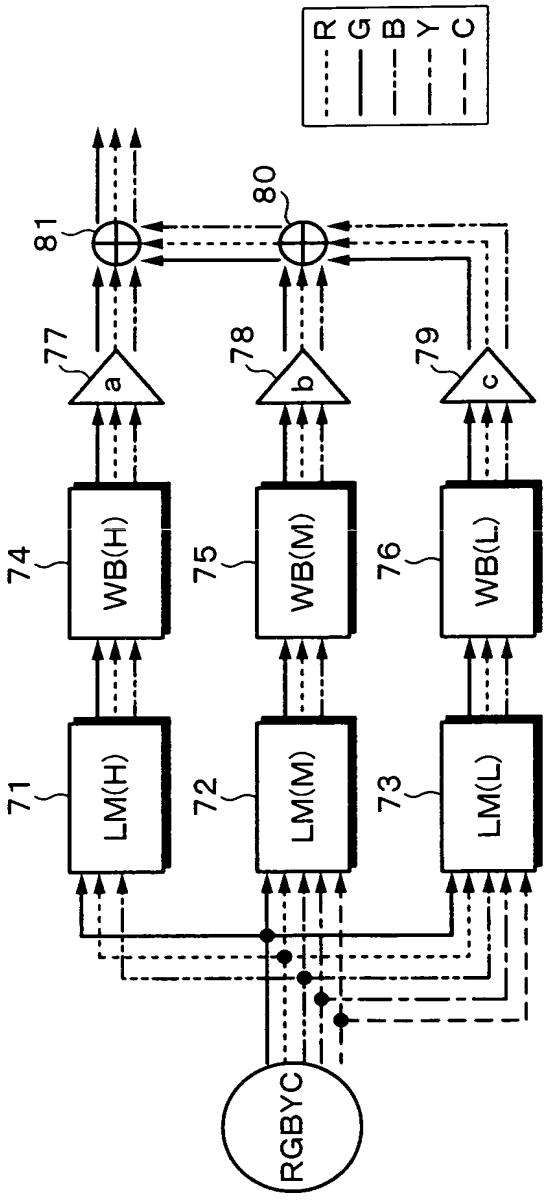
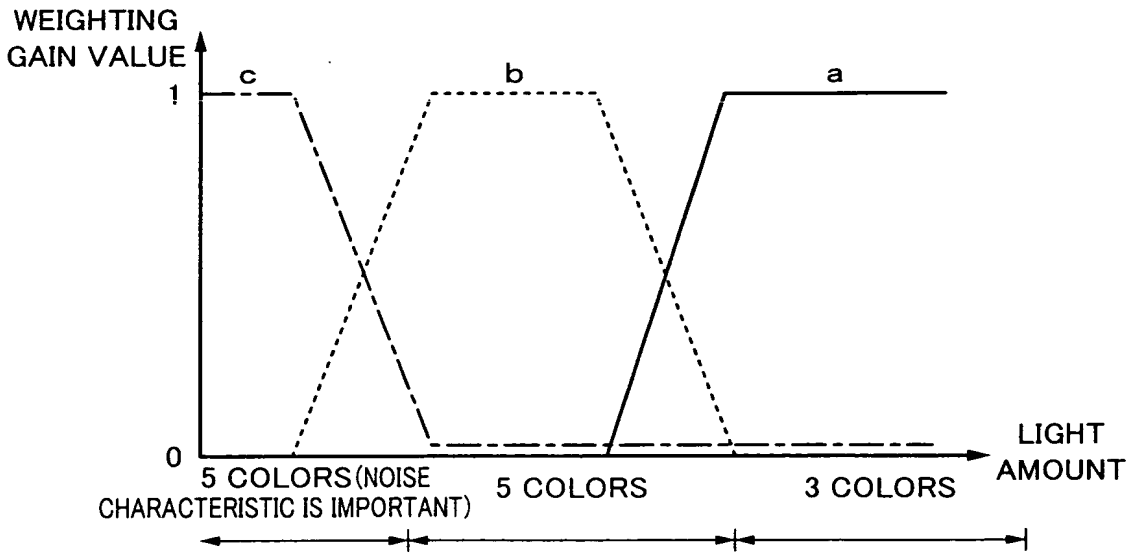

R
G
B
Y
C
80
81
77
78
79
a
b
c
74
75
76
WB(H)
WB(M)
WB(L)
71
72
73
LM(H)
LM(M)
LM(L)
RGBYC

Fig. 18


WEIGHTING
GAIN VALUE
1
0
c
b
a
LIGHT
AMOUNT
5 COLORS (NOISE
CHARACTERISTIC IS IMPORTANT)
5 COLORS
3 COLORS

DESCRIPTION OF REFERENCE NUMERALS

37C, 37Y	SPECTRAL SENSITIVITIES OF CYAN AND YELLOW FILTERS
37R, 37G, 37B	SPECTRAL SENSITIVITIES OF RED, GREEN, AND BLUE FILTERS
42	WHITE BALANCE COMPENSATING PROCESS
43	COLOR TRANSFORMING PROCESS
44	CAMERA GAMMA COMPENSATING PROCESS
52	sRGB GAMMA PROCESS
53	RGB TO XYZ TRANSFORMING PROCESS
54	XYZ TO L*a*b* TRANSFORMING PROCESS
61a	PLOT OF [COLOR REPRODUCIBILITY VERSUS NOISE CHARACTERISTIC] OF HYBRID IMAGING DEVICE
61b	PLOT OF [COLOR REPRODUCIBILITY VERSUS NOISE CHARACTERISTIC] OF PRIMARY COLOR SYSTEM THREE-COLOR IMAGING DEVICE
61c	PLOT OF [COLOR REPRODUCIBILITY VERSUS NOISE CHARACTERISTIC] OF COMPLEMENTARY COLOR SYSTEM FOUR-COLOR IMAGING DEVICE
71	LINEAR MATRIX PROCESS FOR HIGH LUMINANCE
72	LINEAR MATRIX PROCESS FOR MIDDLE LUMINANCE
73	LINEAR MATRIX PROCESS FOR LOW LUMINANCE
77, 78, 79	MULTIPLYING DEVICES WHICH MULTIPLY GAIN COEFFICIENTS a, b, AND c